Technical Bulletin #3

*Joining Data and Map Files
in Community 2020 software*

Community 2020 software contains a wealth of information, but you may not find all the data that pertains to your specific project or community. You may want to map you own data by county, census tract, or block group. For example, you may want to illustrate which counties in your state or cities in your area have a complete "continuum of care" for assistance to the homeless. The process described below is not solely relevant to creating a continuum of care map, but can be used to create your own database for other layers and join them to the software's geographic files. This is a process of creating a database from which to make a thematic map and make changes to the database and map if necessary.

This technical bulletin describes how to join data tables and map tables so that you can show this. The example used here is about counties in the State of Virginia. The information displayed here is hypothetical and illustrative. The data presented here should not be assumed to designate counties which, necessarily in fact, have a continuum of care strategy. Counties, instead of cities, are used here for illustrative purposes. The same procedures would be used for cities.

The major steps involved are (1) creating separate geographic layers (*.cdf) for the State, county, and/or city you wish to map, (2) saving the geographic file as a database file so that it can be modified, (3) modifying the database file to indicated a county, in this case, with a continuum of care, (4) joining that database file to the map table, and (5) creating a thematic map that distinguishes counties with or without a continuum of care strategy. In order to do this, you should become familiar with Chapters 4 and 5 of the Community 2020 training manual and Chapter 9 of the Maptitude User's Guide.

• You will be creating a map of just the counties in your State.
• That way you will create a dataview of just those counties with all of the census data and geographic references for just your State.
• Next you will save that under a different name and save it as a "dbf" file so that you can modify it.
•Then you will join the two dataviews together.

You will have three dataviews and one map.

1. Dataview of just the counties in your State
2. Dataview of just the counties in your State plus the Continuum of Care data and minus all the Census Data
3. Dataview combining the two above
4. Map showing the counties with a continuum of care

Begin by creating a map of the State from the Community 2020 CD. You can go to File|Open and open the State layer from the CD.   This will open up a boundary file of all the States in your region. Another option is to use the Map Library to choose the State as the location, General Purpose Map, and Area map.

Using "Select by Pointing" from the Maptitude tool bar, choose your State from the map. This is similar to the process used to select a city in Chapter 5 of the Community 2020 training manual. Go to Tools|Export to create a Compact Geographic File (*.cdf) of the outline of your State. Save this file to you hard drive.

Close your map of all the States of your region. Or drop the States layer from your map from the Map Library. Open the new file with just the outline of your State or add the layer to your General Purpose map.   If you just have a map of the outline of your States, add the county layer (cccntyl.cdf; high resolution) to your map of the State. You will have added the county layer for the entire region, so you need to select just the counties for your State. If you have used the map from the Map Library, hide or drop all the other layers of the map.

Now that you have a map of just the State and all the counties in the region. If the Counties are not showing due to the Autoscale feature, go to the Layer tool, choose the County layer, choose Autoscale, and choose Clear from the Autoscale dialogue box. Now you need to select only the Counties in your

State. To do this, make the County layer the working layer and choose Dataview|Select by Location.
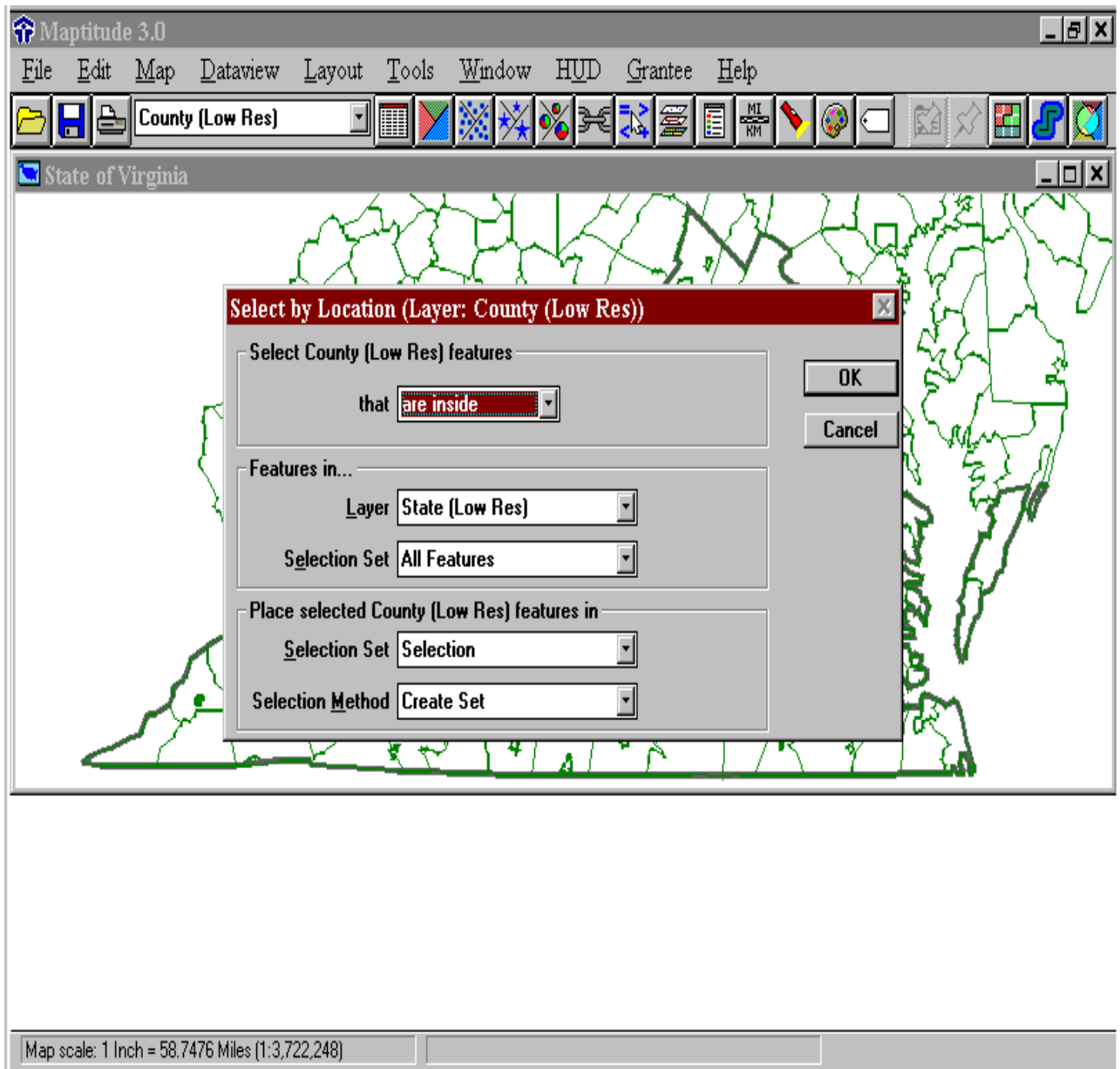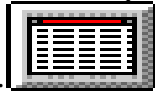

You should make sure that you are choosing Counties based on only the State geography you have selected for only your State. If all of the Counties in your State have not been selected by this process, choose Select By Pointing, hold down the Shift Key, and select **all** the remaining counties in your State. You can zoom in on selected areas, while the rest of the Counties remain selected, and select any still unselected areas.

To create a geographic file of just the Counties in your State, go Tools|Export and create a "Compact Geographic file" of the counties in your State. Drop the regional County layer from your map and add the layer that you have just created. Save this map as your basic map for showing a continuum of care by county.

Now you have a simple map of the State and the Counties. Save but leave this map open; just minimize it. The goal is to create a map with Counties identified as having a continuum of care. You have created a map of counties, but have no continuum of care data except the name of the county. Furthermore, even that is not in a database format. What do you do?
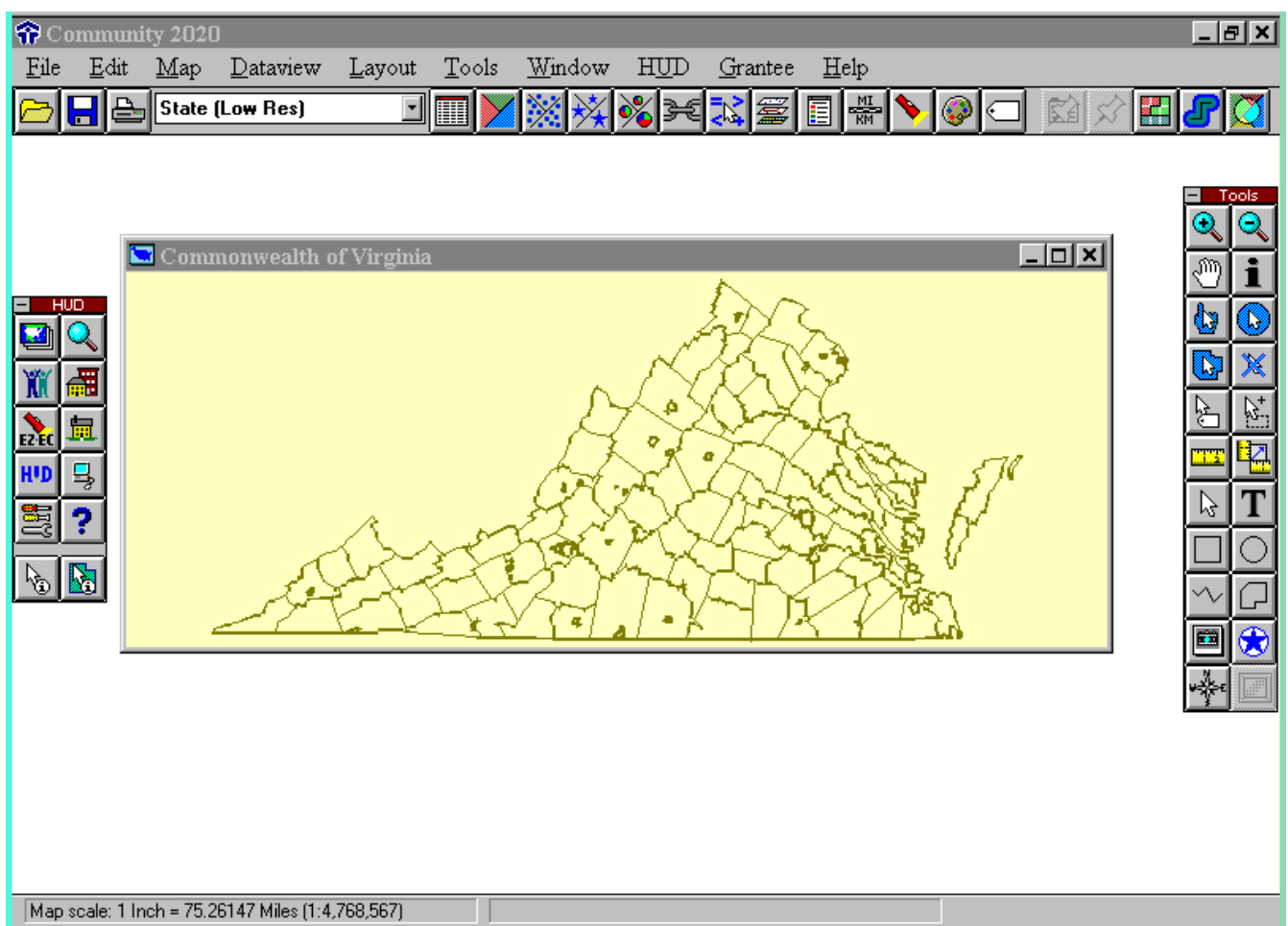

The key to this process is then saving the table which maps the county map, from your Community 2020 CD so that it can be modified to include your data. With your map of just your State's counties open and the county layer as the working layer, choose the dataview icon. You will be able to view

the dataview of the cccntyh.cdf layer, which you have saved to your hard drive under another name, e.g. vacntyh.cdf. You must have the dataview as the active window in Community 2020 and not the map. Save this dataview as a dbase file (*.dbf) file so that you can modify it to classify counties according to the continuum of care coverage. Go to File|Save as and choose "dbase" file.

The general idea for this process is to modify the file you just saved so that you can create a field to represent the continuum of care assessment. That is, we will add fields to a different database file. So first open the newly created dbase file by going to File|Open. This is similar to the beginning of Chapter 4 of the Community 2020 training manual.
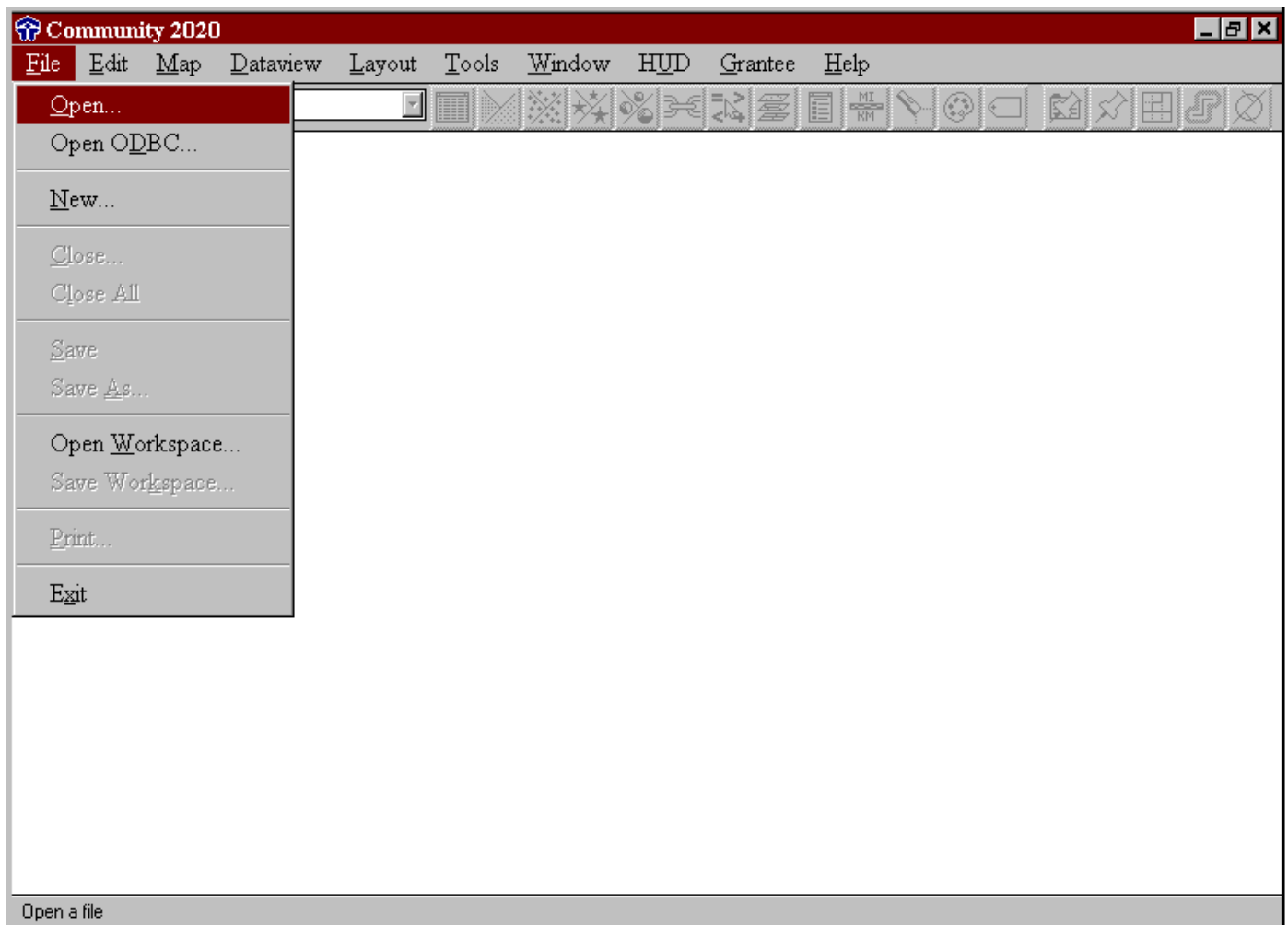
Select the dbase file you created above. In this example the file is called vactcoc.dbf because it was a dataview of the county layer created earlier. In order to modify that layer, it must be saved as a database file first.
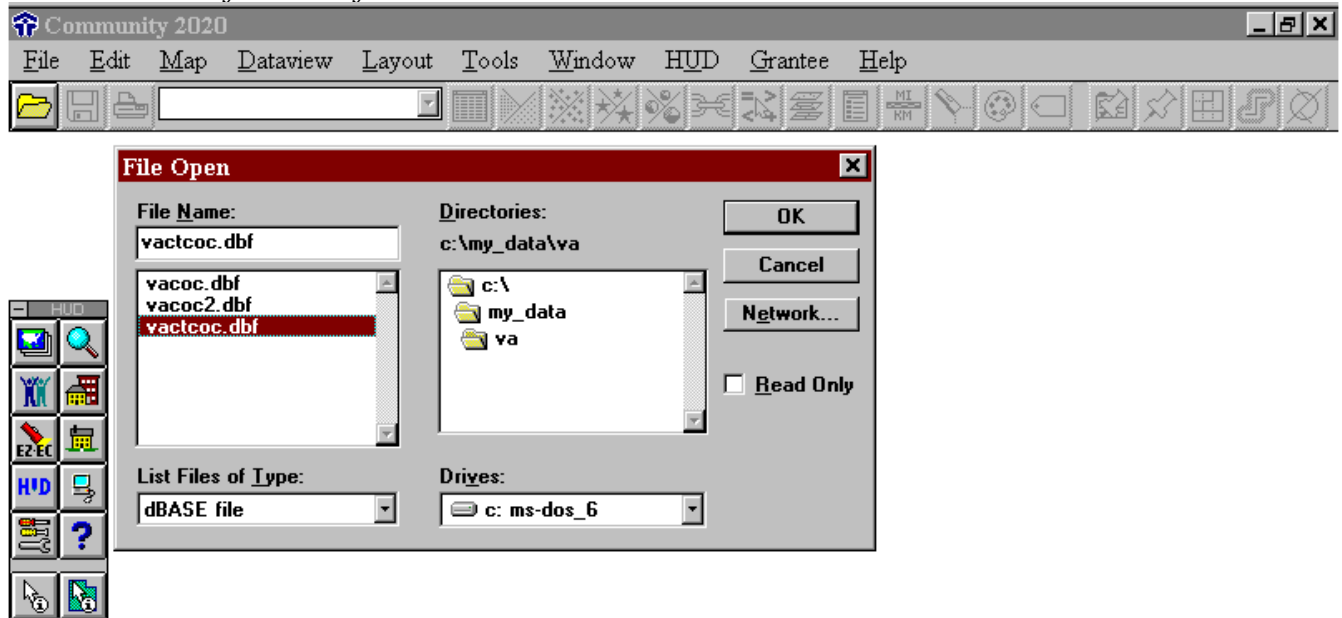
The County file you have created contains a great deal of census data, which you can use, but do not need, in order to create your database about the continuum of care.   In order to create your own database, make the County layer the active layer and click on the New Dataview icon to look at the data

behind your map. Click on the Dataview Fields icon. On the left are all the fields available in the Dataview. On the right, are all the fields you can choose from to create a new dataview.   In order to create a new dataview and, eventually, a new database, choose Clear. This will remove all the fields from the right-hand column, but not **yet** change your dataview. Your original County level geographic and demographic data are still in the County layer for your State you created and saved (and which belongs to your map).

Use the Dataview Fields tool to create a small dataview of your own which you can modify and then join to the geographic file.
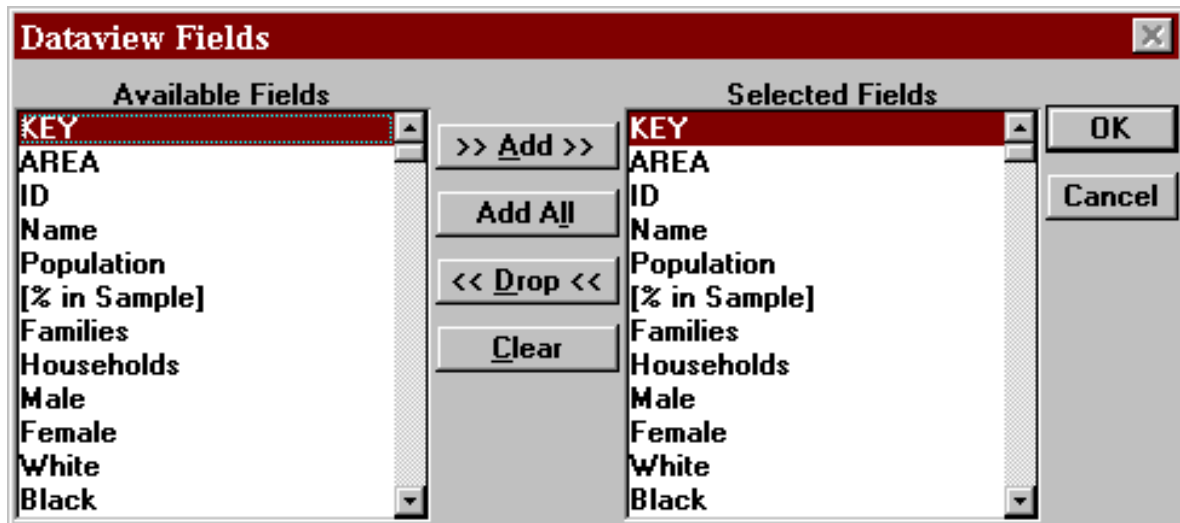
To start creating a new dataview, click on "Clear." This clears the Selected Fields side of the dialog box.   Now you need to add fields which will be associated with the same fields in the geographic dataview. There must be one common field to match and join the dataveiws. It is necessary to have the Key, ID, and/or Name fields in order to match them to the geographic database.   In this case, select Key, ID, and Name from the list of available fields and click on ADD. It is not necessary to use all three, but convenient to make sure that the records (rows) match.

This copies those fields into the right-hand column. You are going to save this dataview as a **database** (dbf file) and modify it to reflect your other information. In order to begin to modify the dataview, save the file as a "dbf" file by going to File|Save As and changing the List of Files by Type to "dBase file." The software will save this as a file, but you will not see any changes on your screen. Close the dataview you have on your screen and choose not to save it. You have already saved it as a database file.

In order to add data so that you can identify which counties have a continuum of care, you need to create another field for the database. Open the database file by going to File|Open and changing the List Files by Type to "dBase" files. In order, in order to make the counties easier to identify, sort them by name. Highlight the Name field in the dataview and click on Dataview|Sort from the main menu.

Now you are ready to modify the database. You want to create a thematic map of the counties without having to label each and every one, one at a time. You can create a new field which will identify any county you choose as one having a successful continuum of care.   As in Chapter 4 of the Training Manual, you can create a Unique_ID field first, but this is not necessary.   In order to indicated the status of all the counties, create a field that specifies whether the county does or does not have a complete continuum of care. In this case, any county will have a value for the continuum of care of either 1 for No (it does not) and 2 for Yes (it does). You need to first create a column to hold these values. Go to Dataview|Modify Table   (instructions about this are contained in Chapter 4 of the training manual), choose Add Field, give the field a new name (such as Cont_Care), set the Type to Integer, and set the Width to 2. The values are only going to be 1 or 2 so that is wide enough. Click OK. This is similar to the exercises in Chapter 4 of the training manual.

Modify Table dialog box with the following fields:

Field Name	Type	Width	Decimals	Index
UNIQUE_ID	Integer	8		
KEY	Integer	12		
AREA	Real Number	10	2	
ID	Integer	12		
NAME	Character	23		
COC	Integer	2		

Buttons: OK, Cancel, Add Field, Drop Field, Move Up, Move Down

Field Information — Name: COC, Type: Integer, Width: 2, Decimals: 0, Index (unchecked)

Record Information — Automatically Generate Records (unchecked), Settings...

This is the basic database. However there are no values in the field you just created. If you don't want to go through all the counties and give a value to each one, there is a simple way.   In order to fill in the values you need, you can do so quickly. Highlight your field, Cont_Care and Go to Edit|Fill. Choose Single Value, and enter 1; assuming that many of your counties will not have a complete Continuum of Care. If they do so, then enter 2 instead. Your field will be filled completely for all records with this number. This is similar to the process you went through to create the values for the Unique_id.

To complete the database, all you need to do is scroll though the list of counties and change the values for the counties when applicable. In this example, I have arbitrarily chosen counties to designate as having a continuum of care and have changed 1 to 2. For any county name, highlight the value in the Cont_Care column with your cursor and type in the new value for each county. **Leave this dataview open.**

VA Continuum of Care

UNIQUE_ID	KEY	AREA	ID	NAME	COC
32	23665	497.52	51001	ACCOMACK VA	1
115	18025	749.39	51003	ALBEMARLE VA	1
101	9168	451.41	51005	ALLEGHANY VA	1
64	13456	383.96	51007	AMELIA VA	1
53	13244	472.24	51009	AMHERST VA	1
56	13304	329.99	51011	APPOMATTOX VA	1
38	24762	26.23	51013	ARLINGTON VA	1
110	17938	995.15	51015	AUGUSTA VA	1
46	13113	555.05	51017	BATH VA	2
39	12992	750.26	51019	BEDFORD VA	1
40	13015	6.44	51515	BEDFORD VA	1
85	8869	362.37	51021	BLAND VA	1
41	13029	553.95	51023	BOTETOURT VA	2
59	13364	578.59	51025	BRUNSWICK VA	1
79	8751	508.58	51027	BUCHANAN VA	1
58	13344	573.16	51029	BUCKINGHAM VA	2

Now you have created your own database distinguishing counties with a complete Continuum of Care. You are ready to join this to the geographic file so that you can create a thematic map.

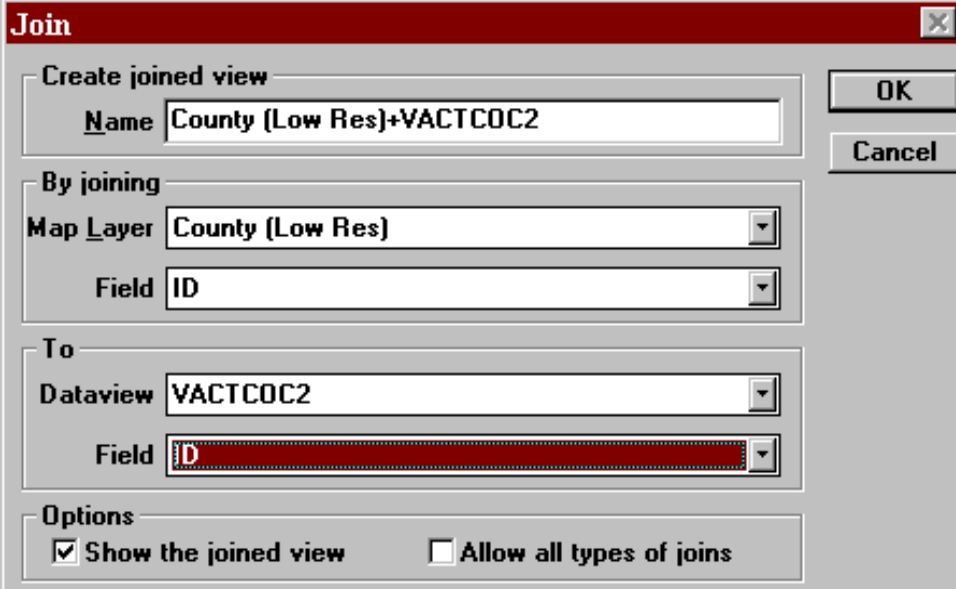You need the two dataviews open: the counties and the continuum of care.

County (Low Res)

KEY	AREA	ID	Name	Population	[% in Sample]	Famil
23665	497.52	51001	ACCOMACK VA	31703	23.0	88
18025	749.39	51003	ALBEMARLE VA	68040	13.1	171
9168	451.41	51005	ALLEGHANY VA	13176	15.3	38

VA Continuum of Care

UNIQUE_ID	KEY	AREA	ID	NAME	COC
32	23665	497.52	51001	ACCOMACK VA	1
115	18025	749.39	51003	ALBEMARLE VA	1
101	9168	451.41	51005	ALLEGHANY VA	1
64	13456	383.96	51007	AMELIA VA	1
53	13244	472.24	51009	AMHERST VA	1
56	13304	329.99	51011	APPOMATTOX VA	1
38	24762	26.23	51013	ARLINGTON VA	1
110	17938	995.15	51015	AUGUSTA VA	1
46	13113	555.05	51017	BATH VA	2
39	12992	750.26	51019	BEDFORD VA	1
40	13015	6.44	51515	BEDFORD VA	1
85	8869	362.37	51021	BLAND VA	1
41	13029	553.95	51023	BOTETOURT VA	2
59	13364	578.59	51025	BRUNSWICK VA	1
79	8751	508.58	51027	BUCHANAN VA	1
58	13344	573.16	51029	BUCKINGHAM VA	2

To Join the dataviews, select Dataview|Join as shown below.
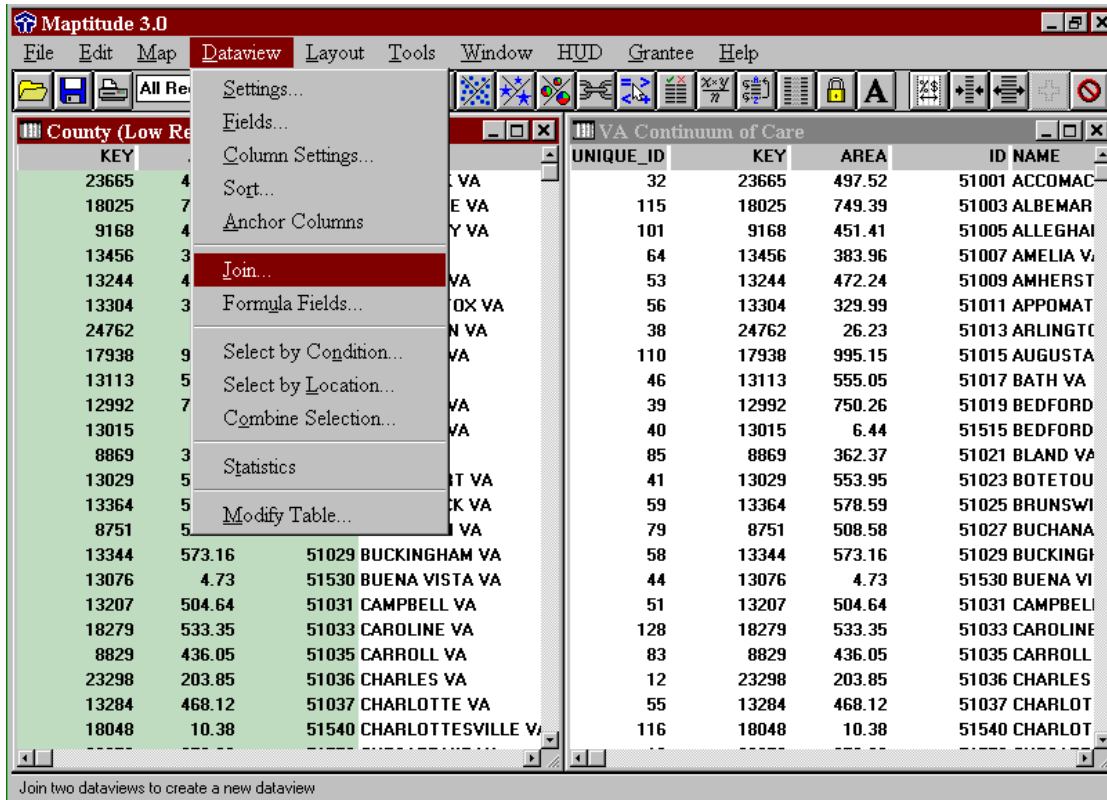
You are ready to join the tables based on a common field. Once you choose Join, you will get a dialogue box asking for what dataviews to join and what is the common field.


The software will create a combined dataview. The dataview title is combined as shown below.

The software will combine the two dataviews. The result is one dataview containing all the fields of both. The fields that are common to each dataview will be labeled using a "dot" notation such as [County (Low Res).Name]. Because the Name field is common to both dataviews, it will appear twice in the combined dataview.

The important feature is that this preserves the geographic references of the main file and adds to it the data that you created.
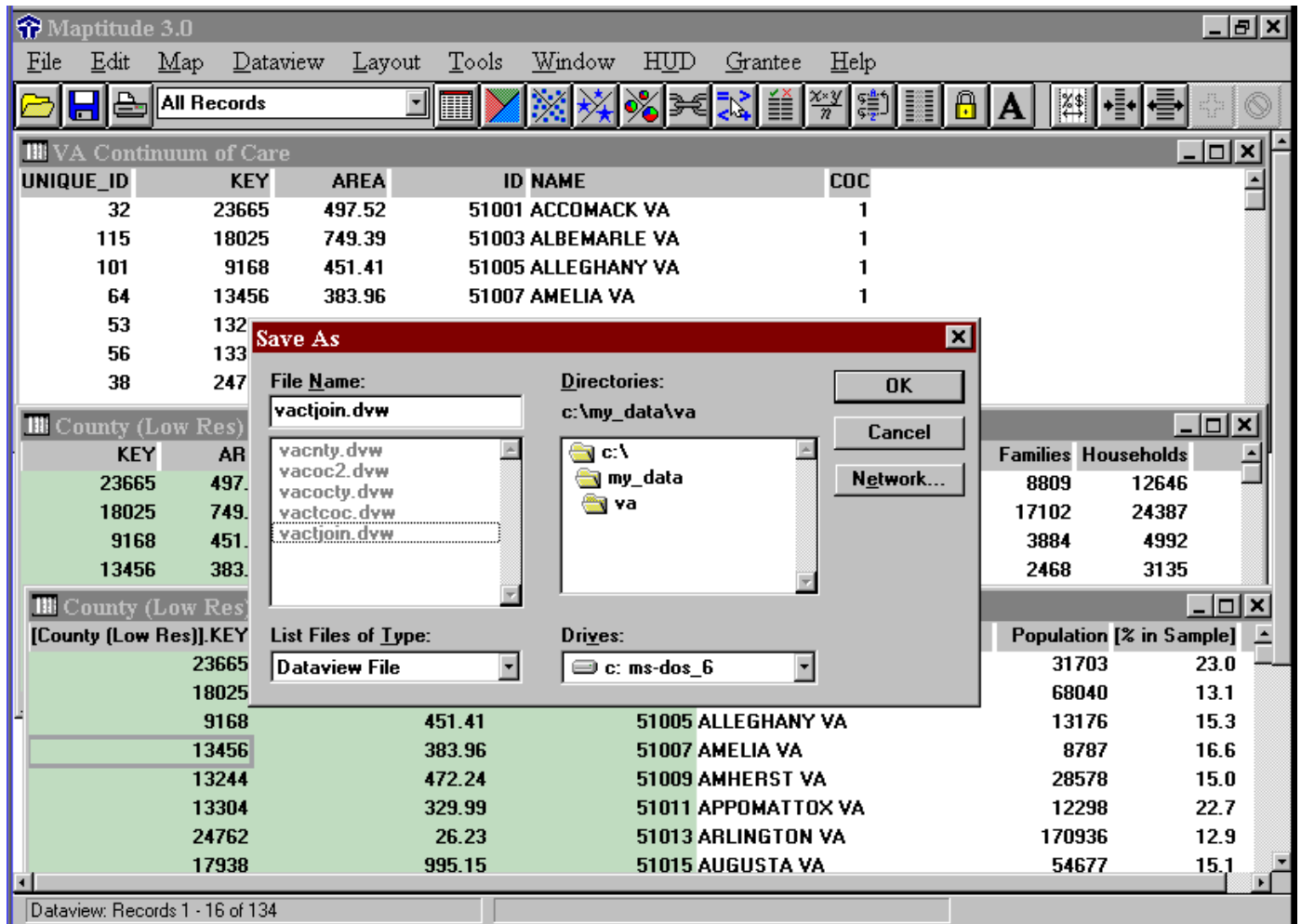
In order to make sure that you have the combined dataview available to use later if you wish to make a thematic map, save it as a combined dataview with a new name. Go to File|Save As, and give it a new name, as shown above.

Because you have left the original county map open, you can now retrieve it by going to Window on the main menu *and choosing the map itself to display.

You can now begin to create a thematic map of the Continuum of Care data you created. This is similar to the process of creating a thematic map from your own data as discussed in Chapter 4 of the Training Manual.

Begin by going to the Thematic Map Wizard. [icon] This is how you identify the field and the values to map. Remember, the field is the Continuum of Care field and there are only two values: 1 for "no" and 2 for "yes." Once you get the Thematic Map Wizard dialogue box choose Continuum of Care field from your combined dataview, "List of Values" to the Method to display and change the "# of classes" to 2.
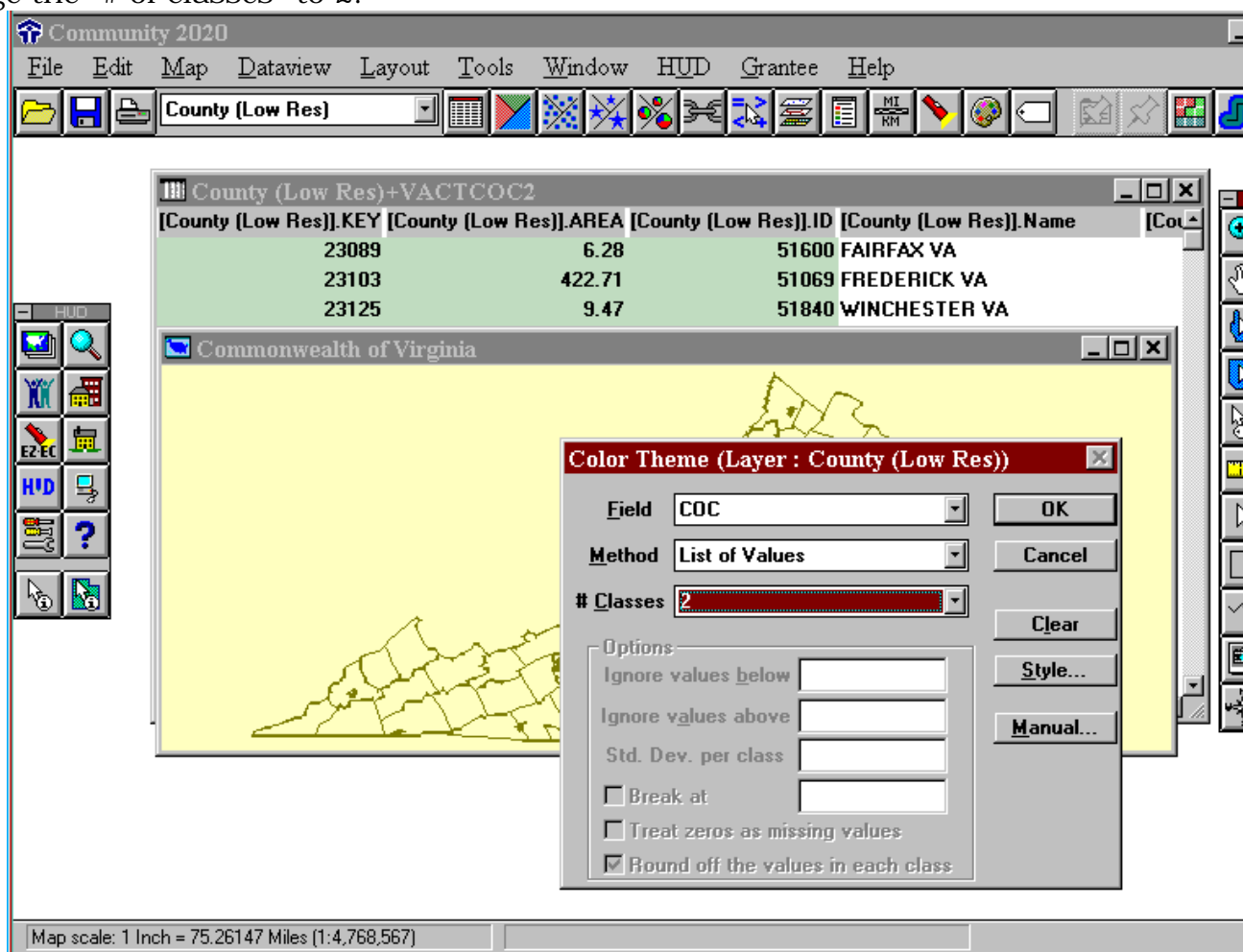
You can now change the style of the shading for each value. Click on the Style button. Each county in this case will be shaded differently to designate which have a complete continuum of care and which do not. You can change the labels so that they appear with the appropriate wording in the legend of the map.
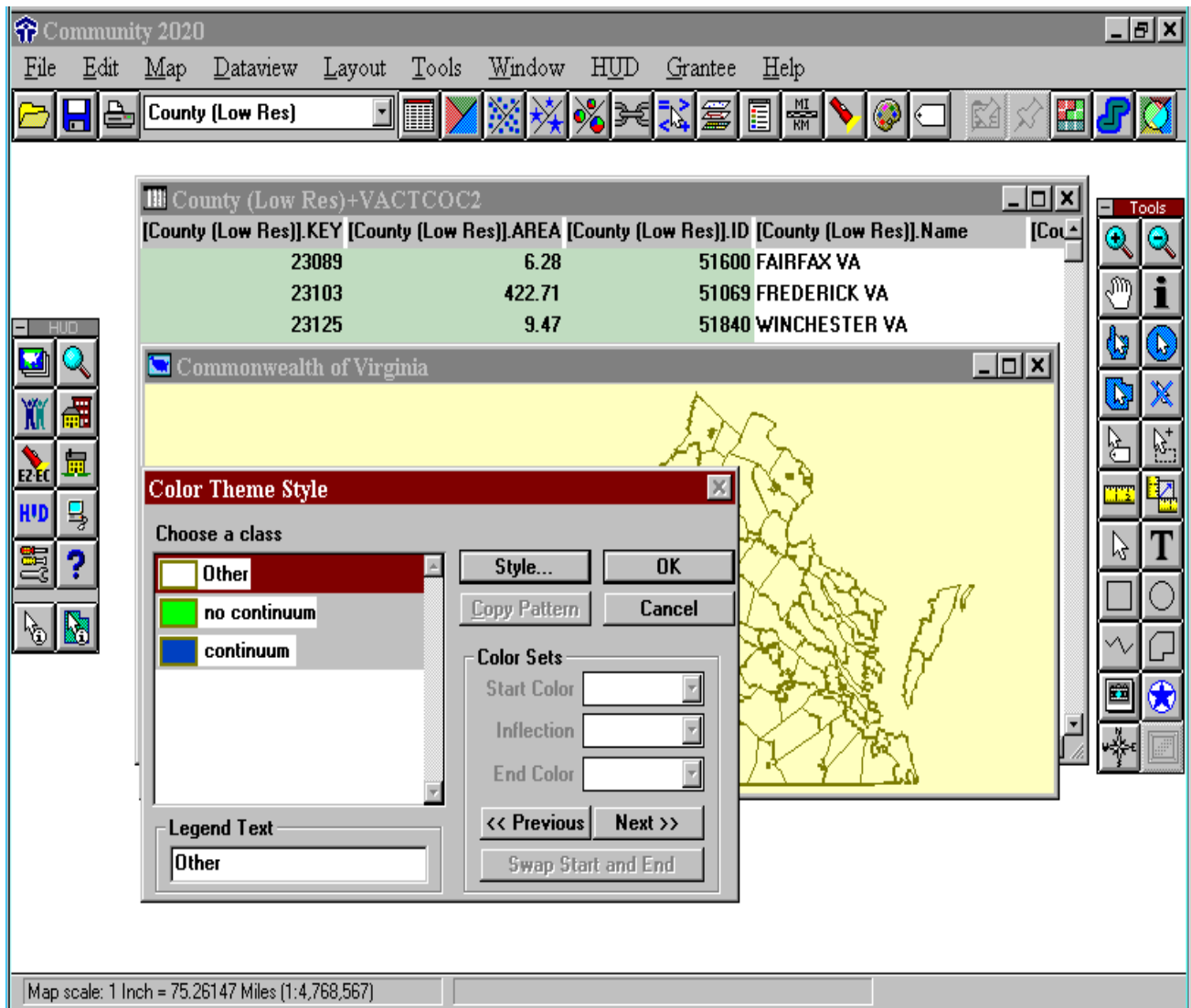
You can now begin to adjust the legend of the map. The theme you have just created will not show on the map until you have selected Legend Contents|Thematic Maps in the dialogue box in which in you adjust the legend.
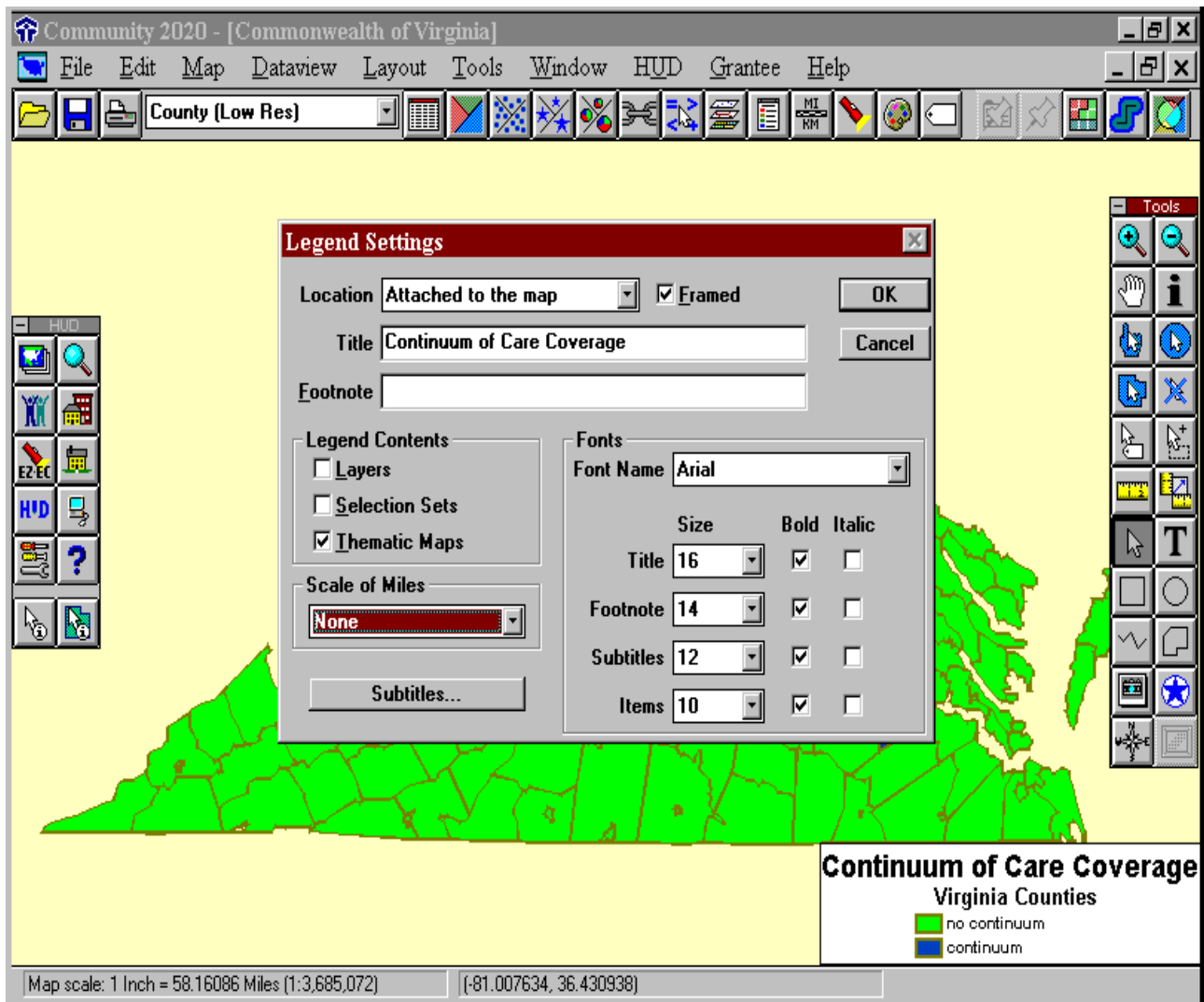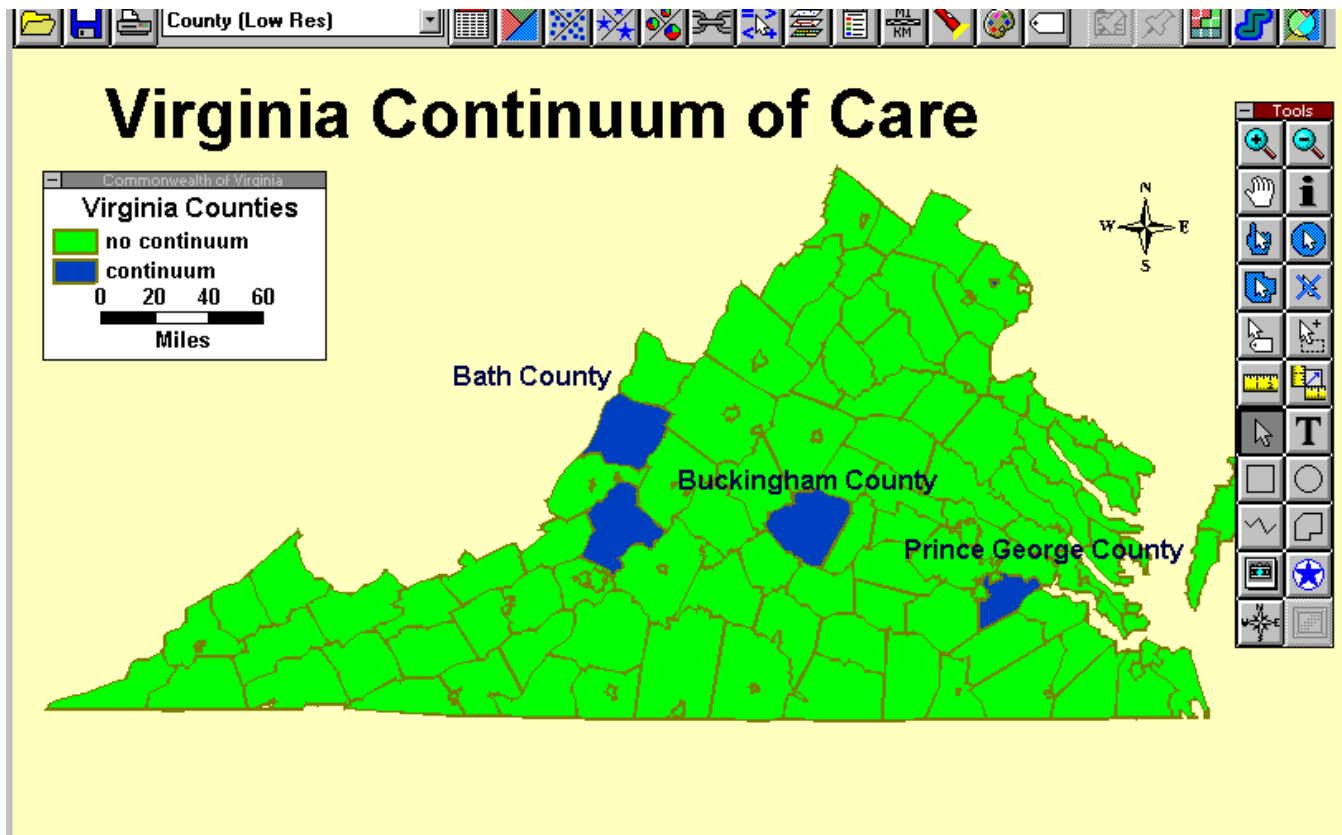
Once you have created a thematic map you can continue to improve the legend, labels, and titles of your map. You would follow the same procedures to create maps of communities rather than counties (using the Census Place layer instead of the County layer). Remember, the counties depicted here as having a complete Continuum of Care have been chosen randomly for illustrative purposes and do not reflect any actual assessments or reviews.

This completes the first of two Technical Bulletins on joining geographic and data tables.